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## RAW SEQUENCE LISTING

DATE: 03/05/2002

PATENT APPLICATION: US/09/659,983D

TIME: 09:54:12

Input Set : A:\21834518 seq list.txt

Output Set: N:\CRF3\03052002\I659983D.raw

p.6

5 <110> APPLICANT: Meloen, Robert Hans  
 7 Oonk, Hendrica Berendina  
 11 <120> TITLE OF INVENTION: An Improved Peptide, Immunogenic Composition and Vaccine or  
 Medical  
 12 Preparation, a Method to Immunise Animals Against the Hormone LHRH, and  
 13 Analogs of the LHRH Tandem Repeat Peptide and their Use as Vaccine  
 17 <130> FILE REFERENCE: 2183-4518US  
 21 <140> CURRENT APPLICATION NUMBER: 09/659,983D  
 23 <141> CURRENT FILING DATE: 2000-09-12  
 27 <150> PRIOR APPLICATION NUMBER: US 09/274,048  
 29 <151> PRIOR FILING DATE: 1999-03-22  
 33 <150> PRIOR APPLICATION NUMBER: US 08/981,557  
 35 <151> PRIOR FILING DATE: 1995-06-07  
 39 <150> PRIOR APPLICATION NUMBER: PCT/NL96/00223  
 41 <151> PRIOR FILING DATE: 1996-06-06  
 45 <150> PRIOR APPLICATION NUMBER: US 08/447,298  
 47 <151> PRIOR FILING DATE: 1995-06-07  
 51 <150> PRIOR APPLICATION NUMBER: US 08/476,013  
 53 <151> PRIOR FILING DATE: 1995-06-07  
 57 <160> NUMBER OF SEQ ID NOS: 13  
 61 <170> SOFTWARE: PatentIn version 3.1  
 65 <210> SEQ ID NO: 1  
 67 <211> LENGTH: 10  
 69 <212> TYPE: PRT  
 71 <213> ORGANISM: Sus scrofa  
 75 <220> FEATURE:  
 77 <221> NAME/KEY: MISC\_FEATURE  
 79 <222> LOCATION: (1)..(1)  
 81 <223> OTHER INFORMATION: X=pyroglutamic acid  
 85 <220> FEATURE:  
 87 <221> NAME/KEY: MISC\_FEATURE  
 89 <222> LOCATION: (10)..(10)  
 91 <223> OTHER INFORMATION: X=Gly-NH2  
 95 <400> SEQUENCE: 1  
 97 Xaa His Trp Ser Tyr Gly Leu Arg Pro Xaa  
 98 1 5 10  
 101 <210> SEQ ID NO: 2  
 103 <211> LENGTH: 10  
 105 <212> TYPE: PRT  
 107 <213> ORGANISM: Homo sapiens  
 111 <220> FEATURE:  
 113 <221> NAME/KEY: MISC\_FEATURE  
 115 <222> LOCATION: (1)..(1)  
 117 <223> OTHER INFORMATION: X=pyroglutamic acid

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121 <220> FEATURE:  
 123 <221> NAME/KEY: MISC\_FEATURE  
 125 <222> LOCATION: (10)..(10)  
 127 <223> OTHER INFORMATION: X=Gly-NH2  
 131 <400> SEQUENCE: 2  
 W--> 133 Xaa His Trp Ser His Gly Trp Tyr Pro Xaa  
 134 1 5 10  
 137 <210> SEQ ID NO: 3  
 139 <211> LENGTH: 20  
 141 <212> TYPE: PRT  
 143 <213> ORGANISM: Artificial Sequence  
 147 <220> FEATURE:  
 149 <223> OTHER INFORMATION: A peptide suitable for eliciting an immune response against  
 forms  
 150 GnRH/ LHRH.  
 152 <220> FEATURE:  
 154 <221> NAME/KEY: MISC\_FEATURE  
 156 <222> LOCATION: (1)..(1)  
 158 <223> OTHER INFORMATION: X=pyroglutamic acid or Gln with attached tail of one or more  
 addi  
 159 tional amino acids  
 163 <220> FEATURE:  
 165 <221> NAME/KEY: MISC\_FEATURE  
 167 <222> LOCATION: (3)..(3)  
 169 <223> OTHER INFORMATION: X=Trp or N(indole)-formyl-tryptophan  
 173 <220> FEATURE:  
 175 <221> NAME/KEY: SITE  
 177 <222> LOCATION: (10)..(11)  
 179 <223> OTHER INFORMATION: there is either a direct bond or a spacer group between Gly  
 at po  
 180 sition 10 and Gln at position 11  
 184 <220> FEATURE:  
 186 <221> NAME/KEY: MISC\_FEATURE  
 188 <222> LOCATION: (13)..(13)  
 190 <223> OTHER INFORMATION: X=Trp or N(indole)-formyl-tryptophan  
 194 <220> FEATURE:  
 196 <221> NAME/KEY: MISC\_FEATURE  
 198 <222> LOCATION: (20)..(20)  
 200 <223> OTHER INFORMATION: X=Gly-NH2 or Gly with attached tail or one or more amino  
 acids  
 204 <220> FEATURE:  
 206 <221> NAME/KEY: REPEAT  
 208 <222> LOCATION: (10)..(19)  
 210 <223> OTHER INFORMATION: repeat of amino acid sequence between positions 10-19 where  
 the a  
 211 mino acids in positions 10-19 are present(at least once  
 215 <400> SEQUENCE: 3  
 W--> 217 Xaa His Xaa Ser Tyr Gly Leu Arg Pro Gly Gln His Xaa Ser Tyr Gly  
 218 1 5 10 15  
 W--> 221 Leu Arg Pro Xaa  
 222 20  
 225 <210> SEQ ID NO: 4  
 227 <211> LENGTH: 21

229 <212> TYPE: PRT

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Input Set : A:\21834518 seq list.txt

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231 <213> ORGANISM: Artificial Sequence  
 235 <220> FEATURE:  
 237 <223> OTHER INFORMATION: A peptide suitable for eliciting an immune response against  
 forms

238 GnRH/ LHRH.  
 240 <220> FEATURE:  
 242 <221> NAME/KEY: MISC\_FEATURE  
 244 <222> LOCATION: (1)..(1)  
 246 <223> OTHER INFORMATION: X=pyroglutamic acid  
 250 <220> FEATURE:  
 252 <221> NAME/KEY: MISC\_FEATURE  
 254 <222> LOCATION: (6)..(6)  
 256 <223> OTHER INFORMATION: X=D-Lys  
 260 <220> FEATURE:  
 262 <221> NAME/KEY: MISC\_FEATURE  
 264 <222> LOCATION: (11)..(11)  
 266 <223> OTHER INFORMATION: X=Gln or Gln preceded by a spacer  
 270 <220> FEATURE:  
 272 <221> NAME/KEY: MISC\_FEATURE  
 274 <222> LOCATION: (16)..(16)  
 276 <223> OTHER INFORMATION: X=D-Lys  
 280 <220> FEATURE:  
 282 <221> NAME/KEY: MISC\_FEATURE  
 284 <222> LOCATION: (21)..(21)  
 286 <223> OTHER INFORMATION: X=Cys-NH2  
 290 <400> SEQUENCE: 4

W--> 292 Xaa His Trp Ser Tyr Xaa Leu Arg Pro Gly Xaa His Trp Ser Tyr Xaa  
 293 1 5 10 15  
 W--> 296 Leu Arg Pro Gly Xaa  
 297 20

300 <210> SEQ ID NO: 5  
 302 <211> LENGTH: 21  
 304 <212> TYPE: PRT  
 306 <213> ORGANISM: Artificial Sequence  
 310 <220> FEATURE:  
 312 <223> OTHER INFORMATION: A peptide suitable for eliciting an immune response against  
 forms

313 GnRH/ LHRH.  
 315 <220> FEATURE:  
 317 <221> NAME/KEY: MISC\_FEATURE  
 319 <222> LOCATION: (1)..(1)  
 321 <223> OTHER INFORMATION: X=pyroglutamic acid  
 325 <220> FEATURE:  
 327 <221> NAME/KEY: MISC\_FEATURE  
 329 <222> LOCATION: (6)..(6)  
 331 <223> OTHER INFORMATION: D-Lys  
 335 <220> FEATURE:  
 337 <221> NAME/KEY: MISC\_FEATURE  
 339 <222> LOCATION: (11)..(11)  
 341 <223> OTHER INFORMATION: X=Gln or Gln preceded by a spacer  
 345 <220> FEATURE:

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Input Set : A:\21834518 seq list.txt

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347 <221> NAME/KEY: MISC\_FEATURE  
 349 <222> LOCATION: (16)..(16)  
 351 <223> OTHER INFORMATION: X=D-Lys  
 355 <220> FEATURE:  
 357 <221> NAME/KEY: MISC\_FEATURE  
 359 <222> LOCATION: (21)..(21)  
 361 <223> OTHER INFORMATION: X=Cys-NH2  
 365 <400> SEQUENCE: 5  
 W--> 367 Xaa His Trp Ala Tyr Xaa Leu Arg Pro Gly Xaa His Trp Ala Tyr Xaa  
 368 1 5 10 15  
 W--> 371 Leu Arg Pro Gly Xaa  
 372 20  
 375 <210> SEQ ID NO: 6  
 377 <211> LENGTH: 21  
 379 <212> TYPE: PRT  
 381 <213> ORGANISM: Artificial Sequence  
 385 <220> FEATURE:  
 387 <223> OTHER INFORMATION: A peptide suitable for eliciting an immune response against  
 forms  
 388 GnRH/ LHRH.  
 390 <220> FEATURE:  
 392 <221> NAME/KEY: MISC\_FEATURE  
 394 <222> LOCATION: (1)..(1)  
 396 <223> OTHER INFORMATION: X=pyroglutamic acid  
 400 <220> FEATURE:  
 402 <221> NAME/KEY: MISC\_FEATURE  
 404 <222> LOCATION: (6)..(6)  
 406 <223> OTHER INFORMATION: X=D-Lys  
 410 <220> FEATURE:  
 412 <221> NAME/KEY: MISC\_FEATURE  
 414 <222> LOCATION: (11)..(11)  
 416 <223> OTHER INFORMATION: X=Gln or Gln preceded by a spacer  
 420 <220> FEATURE:  
 422 <221> NAME/KEY: MISC\_FEATURE  
 424 <222> LOCATION: (16)..(16)  
 426 <223> OTHER INFORMATION: X=D-Lys  
 430 <220> FEATURE:  
 432 <221> NAME/KEY: MISC\_FEATURE  
 434 <222> LOCATION: (21)..(21)  
 436 <223> OTHER INFORMATION: X=Cys-NH2  
 440 <400> SEQUENCE: 6  
 W--> 442 Xaa His Trp Ser Tyr Xaa Leu Ala Pro Gly Xaa His Trp Ser Tyr Xaa  
 443 1 5 10 15  
 W--> 446 Leu Ala Pro Gly Xaa  
 447 20  
 450 <210> SEQ ID NO: 7  
 452 <211> LENGTH: 21  
 454 <212> TYPE: PRT  
 456 <213> ORGANISM: Artificial Sequence  
 460 <220> FEATURE:

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Input Set : A:\21834518 seq list.txt

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462 <223> OTHER INFORMATION: A peptide suitable for eliciting an immune response against forms

463 GnRH/ LHRH.

465 &lt;220&gt; FEATURE:

467 &lt;221&gt; NAME/KEY: MISC\_FEATURE

469 &lt;222&gt; LOCATION: (1)..(1)

471 &lt;223&gt; OTHER INFORMATION: X=pyroglutamic acid

475 &lt;220&gt; FEATURE:

477 &lt;221&gt; NAME/KEY: MISC\_FEATURE

479 &lt;222&gt; LOCATION: (6)..(6)

481 &lt;223&gt; OTHER INFORMATION: X=D-Lys

485 &lt;220&gt; FEATURE:

487 &lt;221&gt; NAME/KEY: MISC\_FEATURE

489 &lt;222&gt; LOCATION: (11)..(11)

491 &lt;223&gt; OTHER INFORMATION: X=Gln or Gln preceded by a spacer

495 &lt;220&gt; FEATURE:

497 &lt;221&gt; NAME/KEY: MISC\_FEATURE

499 &lt;222&gt; LOCATION: (16)..(16)

501 &lt;223&gt; OTHER INFORMATION: X=D-Lys

505 &lt;220&gt; FEATURE:

507 &lt;221&gt; NAME/KEY: MISC\_FEATURE

509 &lt;222&gt; LOCATION: (21)..(21)

511 &lt;223&gt; OTHER INFORMATION: X=Cys-NH2

515 &lt;400&gt; SEQUENCE: 7

W-1> 517 Xaa His Trp Ser Tyr Xaa Leu Arg Pro Ala Xaa His Trp Ser Tyr Xaa  
 518 1                    5                    10                    15

W-1> 521 Leu Arg Pro Ala Xaa  
 522                    20

525 &lt;210&gt; SEQ ID NO: 8

527 &lt;211&gt; LENGTH: 42

529 &lt;212&gt; TYPE: PRT

531 &lt;213&gt; ORGANISM: Artificial Sequence

535 &lt;220&gt; FEATURE:

537 <223> OTHER INFORMATION: A peptide suitable for eliciting an immune response against forms

538 GnRH/ LHRH.

540 &lt;220&gt; FEATURE:

542 &lt;221&gt; NAME/KEY: MISC\_FEATURE

544 &lt;222&gt; LOCATION: (1)..(1)

546 &lt;223&gt; OTHER INFORMATION: X=NH2-Glu

550 &lt;220&gt; FEATURE:

552 &lt;221&gt; NAME/KEY: MISC\_FEATURE

554 &lt;222&gt; LOCATION: (6)..(6)

556 &lt;223&gt; OTHER INFORMATION: X=D-Lys

560 &lt;220&gt; FEATURE:

562 &lt;221&gt; NAME/KEY: MISC\_FEATURE

564 &lt;222&gt; LOCATION: (11)..(11)

566 &lt;223&gt; OTHER INFORMATION: X=Gln or Gln preceded by a spacer

570 &lt;220&gt; FEATURE:

572 &lt;221&gt; NAME/KEY: MISC\_FEATURE

574 &lt;222&gt; LOCATION: (16)..(16)

W-1> No n and/or Xaa has been detected in the Sequence Listing  
 Review the Sequence Listing to insure a corresponding  
 explanation is presented in the <220> to <223> fields of  
 each sequence using n or Xaa.

## VERIFICATION SUMMARY

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DATE: 03/05/2002

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Input Set : A:\21834518 seq list.txt

Output Set: N:\CRF3\03052002\I659983D.raw

L:97 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:133 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2  
L:217 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:221 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:292 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4  
L:296 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4  
L:367 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5  
L:371 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5  
L:442 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6  
L:446 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6  
L:517 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7  
L:521 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7  
L:632 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8  
L:636 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8  
L:640 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8  
L:711 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9  
L:715 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9  
L:776 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10  
L:780 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10  
L:851 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11  
L:855 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11  
L:926 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12  
L:930 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12  
L:1001 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13  
L:1005 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13